

What is claimed is:

- 1           1.     A system for pre-compiling a source cursor into a target library  
2 cache, comprising:  
3           at least one source cursor stored in a source library cache, each source  
4 cursor comprising a statement with a shareable part and a non-shareable part;  
5           an extraction process selectively copying the source cursor by extracting  
6 the shareable part of the statement from the source library cache; and  
7           a compilation process pre-compiling the shareable part of the extracted  
8 source cursor into a target cursor without execution.
- 1           2.     A system according to Claim 1, further comprising:  
2           a lookup function creating a hash value from a text statement  
3 corresponding to the extracted source cursor, comparing the hash value to a set of  
4 target cursors stored in the target library cache and retrieving a reference pointer  
5 upon locating a matching target cursor.
- 1           3.     A system according to Claim 2, further comprising:  
2           a build function requesting a context area upon failing to locate a matching  
3 target cursor, loading the requested context area and building a new target cursor  
4 in the target library cache.
- 1           4.     A system according to Claim 1, further comprising:  
2           a parent cursor storing the target cursor as a parsed representation of a text  
3 statement corresponding to the extracted source cursor, the parent cursor  
4 comprising at least one child cursor.
- 1           5.     A system according to Claim 4, further comprising:  
2           for each session, the compilation process creating at least one child cursor  
3 for each text statement having identical text and different objects.
- 1           6.     A system according to Claim 4, further comprising:  
2           for each session, the compilation process creating at least one child cursor  
3 for each text statement having different session environments.

1           7.    A system according to Claim 1, further comprising:  
2           a target node asynchronously warming the target library cache prior to a  
3           switchover.

1           8.    A system according to Claim 1, further comprising:  
2           a target node asynchronously warming the target library cache prior to an  
3           unplanned failover.

1           9.    A system according to Claim 1, wherein the extraction process  
2           extracts data selected from the group consisting of at least one of statement text,  
3           statement type, parsing user and parsing schema; parsing session environment;  
4           parsed representation and execution plan; and bind variable data.

1           10.   A system according to Claim 1, wherein the extracted statement is  
2           written in a structured database language comprising at least one of SQL and  
3           PL/SQL.

1           11.   A method for pre-compiling a source cursor into a target library  
2           cache, comprising:  
3           storing at least one source cursor in a source library cache, each source  
4           cursor comprising a statement with a shareable part and a non-shareable part;  
5           selectively copying the source cursor by extracting the shareable part of  
6           the statement from the source library cache; and  
7           pre-compiling the shareable part of the extracted source cursor into a  
8           target cursor without execution.

1           12.   A method according to Claim 11, further comprising:  
2           creating a hash value from a text statement corresponding to the extracted  
3           source cursor;  
4           comparing the hash value to a set of target cursors stored in the target  
5           library cache; and  
6           retrieving a reference pointer upon locating a matching target cursor.

- 1 13. A method according to Claim 12, further comprising:  
2 requesting a context area upon failing to locate a matching target cursor;  
3 loading the requested context area; and  
4 building a new target cursor in the target library cache.
- 1 14. A method according to Claim 11, further comprising:  
2 storing the target cursor as a parsed representation of a text statement  
3 corresponding to the extracted source cursor, the target cursor comprising a parent  
4 cursor and at least one child cursor.
- 1 15. A method according to Claim 14, further comprising:  
2 for each session, creating at least one child cursor for each text statement  
3 having identical text and different objects.
- 1 16. A method according to Claim 14, further comprising:  
2 for each session, creating at least one child cursor for each text statement  
3 having different session environments.
- 1 17. A method according to Claim 11, further comprising:  
2 asynchronously warming the target library cache prior to a switchover.
- 1 18. A method according to Claim 11, further comprising:  
2 asynchronously warming the target library cache prior to an unplanned  
3 failover.
- 1 19. A method according to Claim 11, further comprising:  
2 extracting data selected from the group consisting of at least one of  
3 statement text, statement type, parsing user and parsing schema; parsing session  
4 environment; parsed representation and execution plan; and bind variable data.
- 1 20. A method according to Claim 11, wherein the extracted statement  
2 is written in a structured database language comprising at least one of SQL and  
3 PL/SQL.

1           21.    A computer-readable storage medium holding code for performing  
2   the method according to Claim 11.

1           22.    A system for staging a pre-compiled cursor in a warmed instance  
2   cache, comprising:

3           a hash value created from a source cursor extracted from a source library  
4   cache, the source cursor comprising a shareable part and a non-shareable part;  
5           a compilation process comparing the hash value to one or more target  
6   cursors maintained in a target library cache and retrieving a reference pointer to  
7   an address of a matching target cursor.

1           23.    A system according to Claim 22, further comprising:  
2   an open function opening a cursor definition entry in the target library  
3   cache.

1           24.    A system according to Claim 23, further comprising:  
2   a parse function instantiating the target cursor into the target library cache.

1           25.    A system according to Claim 24, further comprising:  
2   a bind function binding each input variable in the shareable part of the  
3   target cursor.

1           26.    A system according to Claim 25, further comprising:  
2   a describe function describing type definitions for each input variable in  
3   the target cursor without execution.

1           27.    A system according to Claim 26, further comprising:  
2   a close function closing the target cursor.

1           28.    A method for staging a pre-compiled cursor in a warmed instance  
2   cache, comprising:  
3           creating a hash value from a source cursor extracted from a source library  
4   cache, the source cursor comprising a shareable part and a non-shareable part;

5 comparing the hash value to one or more target cursors maintained in a  
6 target library cache; and  
7 retrieving a reference pointer to an address of a matching target cursor.

1 29. A method according to Claim 28, further comprising:  
2 opening a cursor definition entry in the target library cache.

1 30. A method according to Claim 29, further comprising:  
2 instantiating the target cursor into the target library cache.

1 31. A method according to Claim 30, further comprising:  
2 binding each input variable in the shareable part of the target cursor.

1 32. A method according to Claim 31, further comprising:  
2 describing type definitions for each input variable in the target cursor  
3 without execution.

1 33. A method according to Claim 32, further comprising:  
2 closing the target cursor.

1 34. A computer-readable storage medium holding code for performing  
2 the method according to Claim 28.

1 35. A method, comprising:  
2 executing a database statement in a first database instance;  
3 sending the database statement from the first database instance to a second  
4 database instance;  
5 in the second database instance, generating and storing a structure  
6 required to prepare the database statement for execution in the second database  
7 instance;  
8 receiving from a user or application a request to execute the database  
9 statement in the second database instance; and  
10 after receiving the request, using the structure to execute the database  
11 statement in the second database instance.

1 36. A method according to Claim 35, wherein the structure is a parse  
2 tree for the database statement.

1 37. A method according to Claim 35, wherein the structure is an  
2 execution plan for the database statement

1 38. A method according to Claim 35, the sending operation occurs in  
2 anticipation of a planned shutdown of the first database instance.

1 39. A method according to Claim 35, wherein the sending operation  
2 occurs in anticipation of an unplanned shutdown of the first database instance that  
3 may possibly occur in the future.

1 40. A method, comprising:  
2 receiving a database statement for execution in a first database instance;  
3 generating in the first database instance, a structure required to prepare the  
4 database statement for execution;  
5 executing the first database statement in the first database instance;  
6 sending the structure from the first database instance to a second database  
7 instance;  
8 receiving from a user or application a request to execute the database  
9 statement in the second database instance; and  
10 after receiving the request, using the structure to execute the database  
11 statement in the second database instance.

1 41. A method according to Claim 40, wherein the structure is a parse  
2 tree for the database statement.

1 42. A method according to Claim 40, wherein the structure is an  
2 execution plan for the database statement.

1 43. A method according to Claim 40, the sending operation occurs in  
2 anticipation of a planned shutdown of the first database instance.

